

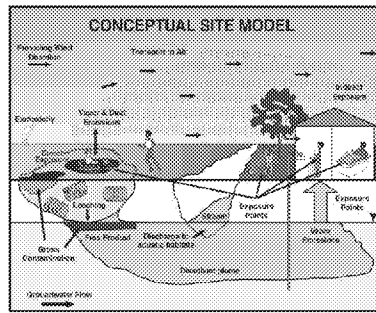
Sustainable and Healthy Communities: Update on Vulnerable Lifestage Research

CEH PACT

July 2018

Vision: ORD will integrate public health, environmental engineering, and ecosystems research to provide and translate:

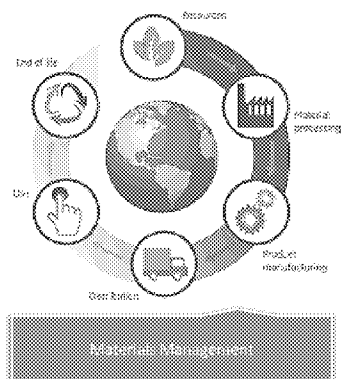
1. Remediation solutions for contaminated sites
2. Operational tools for waste sites and for materials management
3. Revitalizing communities impacted by contamination and natural disasters by linking ecosystem services to human health and well-being



- Technical Support (engineering, ground water)
 - 5 centers support states, communities
- Remediation Solutions
 - Groundwater
 - Vapor Intrusion
 - Soils and Sediments
 - Mining Sites
- Leaking Underground Storage Tanks
- Priority Chemicals
 - Lead contamination, bioavailability, soil/dust ingestion
 - Per- and polyfluoroalkyl substances (PFAS) toxicity, treatment, and remediation

Ex. 5 Deliberative Process (DP)

Waste and Sustainable Materials Management (proposed)



- Landfill Management
 - Liquids management and bioreactors
 - Post closure care
 - Uncontrolled heating events
- Life Cycle Inventories and Methodologies
- Waste Recovery & Beneficial Use of Materials



Healthy and Resilient Communities (proposed)

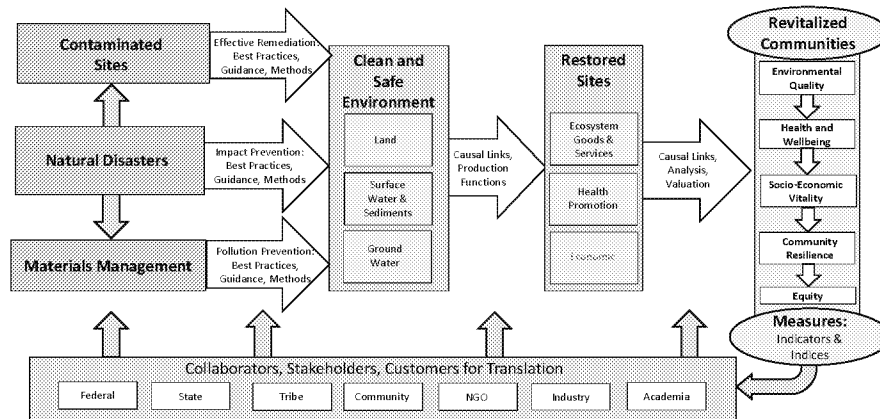


- Benefits from Remediation, Restoration, and Revitalization
 - Impacts on ecosystem services, human health and well-being
- Vulnerable Groups in Adversely Impacted Communities
 - Community vulnerability, cumulative health impacts, building capacity
- Resilient Communities
 - Integrate resilience into natural disaster planning and recovery
- Measuring Outcomes
 - Report on the Environment

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Ex. 5 Deliberative Process (DP)

SHC's Conceptual Diagram



SHC Strategic Research Action Plan: Topics and Research Areas

Topic 1: Contaminated Sites

Technical Support
Soils and Sediments
Groundwater
Mining and Mineral
Processing Site
Remediation
Solvent Vapor Intrusion
Leaking Underground
Storage Tanks
Chemicals of Immediate
Concern

Topic 2: Waste and Materials Management

Materials Management
— Landfills
Life Cycle Inventories
and Methodologies
Waste Recovery and
Beneficial Use

Topic 3: Healthy and Resilient Communities

Benefits from Remediation,
Restoration and Revitalization
Vulnerable Groups in
Adversely Impacted
Communities
Resilient Communities
Measuring Outcomes

Topic: Contaminated Sites, Continued	
Chemicals of Immediate Concern	Lead:
	Improved predictions of national and local scale geographic distribution of children's blood levels to target lead exposure risk reduction, prevention, and mitigation efforts
	Methods and data on key drivers of blood lead levels in children to inform risk reduction strategies at national and local scales and model evaluation for application of regulatory models.
	Innovative solutions for limiting lead migration and exposure.
	PFAS:
	Technical support: Sampling, analysis, and remediation of PFAS from contaminated soils and sediments, groundwater, landfills, and industrial facilities
	Chemical transformation and mobility of PFAS at contaminated sites and managing end-of-life disposal for consumer and industrial solid waste
	Multi-media PFAS exposure estimates for risk management and identification of locations of high potential exposure.

Topic: Healthy and Resilient Communities	
Benefits from Remediation, restoration and Revitalization	Identify & map community assets
	Forecasting ecosystem services & benefits to human health & well-being
	Applications of ecosystem service-based tools to support decision-making
	Case studies on the applicability of ORD tools at Brownfields
Vulnerable Groups in Adversely Impacted Communities	Characterize the interrelationships between chemical & non-chemical stressors
	Cumulative impacts of environmental burdens
	Approaches for revitalizing communities
Resilient Communities	Assessing vulnerabilities
	Resiliency concepts
	Evaluating changes in resilience
Measuring Outcomes	Management plan for ROE indicators and website
	New nationwide indicators
	ROE strategic blueprint
	Identify trends amenable to interpretation
	Identify ROE indicators amenable to scenario development

SHC – Science to Achieve Results

- Children's Environmental Health and Disease Prevention Research Centers
 - 2014 Joint RFA with NIEHS, 5 Center grants through 8/31/2020; and 2012 Joint RFA with NIEHS, 8 center grants through 6/31/2020.
 - **Outputs:** 2017 Impacts Report (delivered) and 2021 Impacts Report
- Healthy Schools: Environmental Factors, Children's Health and Performance, and Sustainable Building Practices
 - 2013 STAR RFA, 7 grants through 12/2019.
 - **Outputs:** 2019 Research Synthesis Report and Wi-Ki Tool and Workshop for Healthy Schools for School Practitioners and Communities (2020)
- Using a Total Environment Framework (Built, Natural, Social Environments) to Assess Life-long Health Effects of Chemical Exposures
 - 2017 STAR RFA, 3 grants through 12/31/2021.
 - **Outputs:** 2019 Interim Workshop and Report, 2021 Impacts Report
- Centers of Excellence on Environmental Health Disparities Research
 - 2014 Joint RFA with NIMHD/NIEHS, 5 center grants through 6/30/2021.
 - **Outputs:** 2017 Research Summary Report (delivered) and 2021 Impacts Report

Ex. 5 Deliberative Process (DP)